

The impact of digital transformations on training

AZUKIT - an artificial intelligence (AI)-assisted apprentice learning tutor

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Speaker



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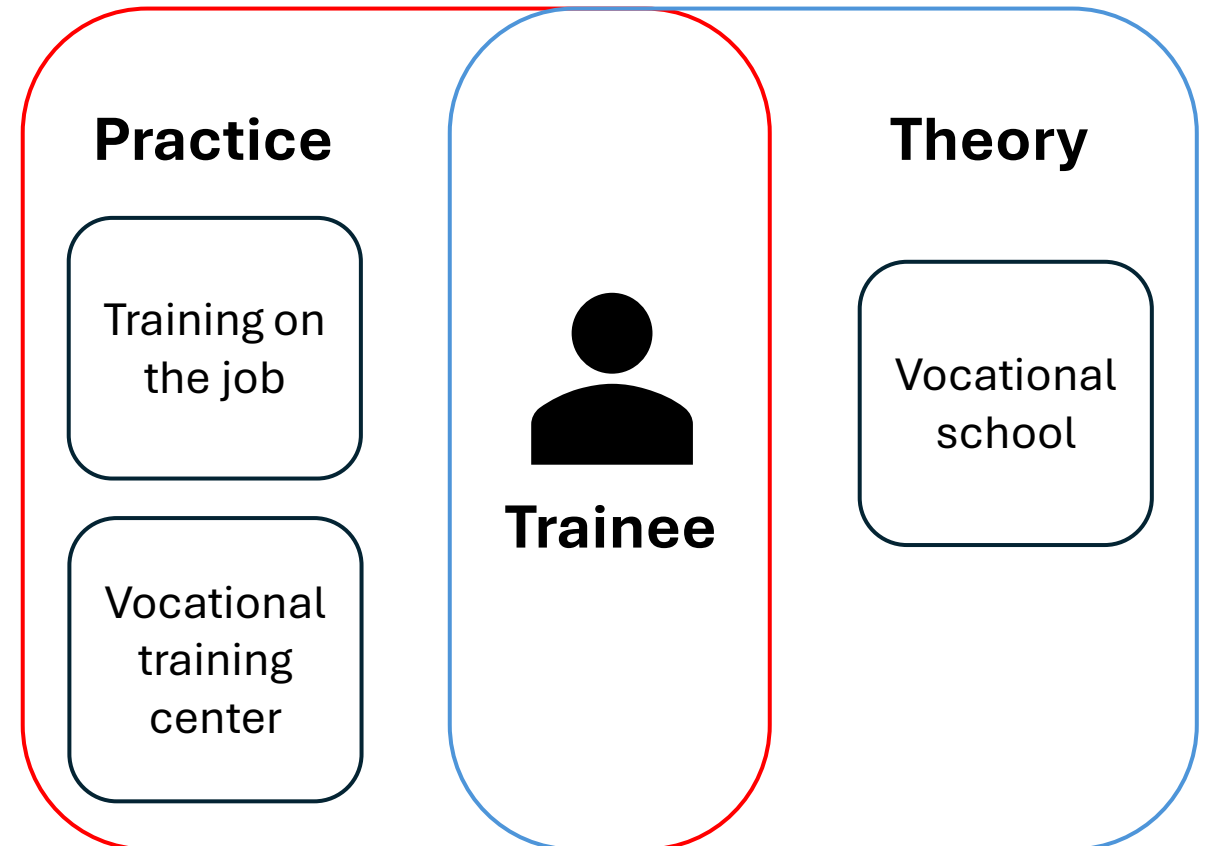
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Environmental technologist for wastewater management

- **Dual vocational training** as common in Germany
- **Level 4** of the National Qualifications Framework
- **New training curriculum** since 2024



Environmental technologist for wastewater management

- operates and maintains critical infrastructures, such as drainage systems, rainwater management systems, sewage plants
- contributes to achieving the **sustainable development goals**, particularly:



Environmental technologist for wastewater management

- treats **excrements, bacteria, and waste**
- is a stigmatized profession, which is particularly vulnerable in the context of **skills shortage**



AZUKIT – an AI-supported learning tutor for trainees

Goal increase the attractiveness and quality of training for environmental technologists by digital technologies

Project term 08/2024-12/2027

Partners



Needs assessment

- 53 % of companies are convinced that the use of digital media increases the attractiveness of vocational training (Gensicke et al. 2016)
- 39% of trainees use digital tools for learning “gladly and regularly”, a further 43% use them “not regularly, but then gladly” (Bräunig et al., in prep)



The AZUKIT approach

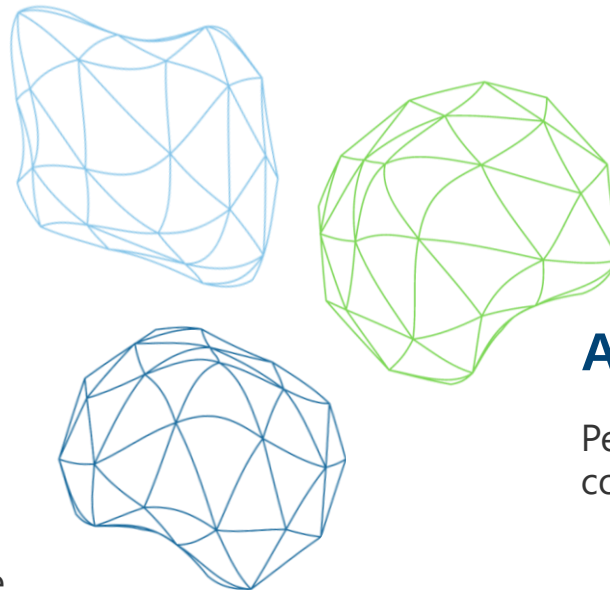
Development of a three-dimensional digital learning environment

Interactive learning contents

learning goal-oriented and media-supported

LMS

User-friendly interface



AI-tutor

Personal digital and diagnostic learning companion (mobile first)

Benefits

For trainees

- learning independent of time and place and independent of Youtube and ChatGPT
- identification of personal knowledge gaps
- individual exam preparation via mobile device

For trainers

- relief in everyday work routine
- insight into the trainees' individual learning progress

For vocational schools and training centers

- high-quality digital learning material
- insight into the trainees' individual learning progress



Challenges

Reliability of AI

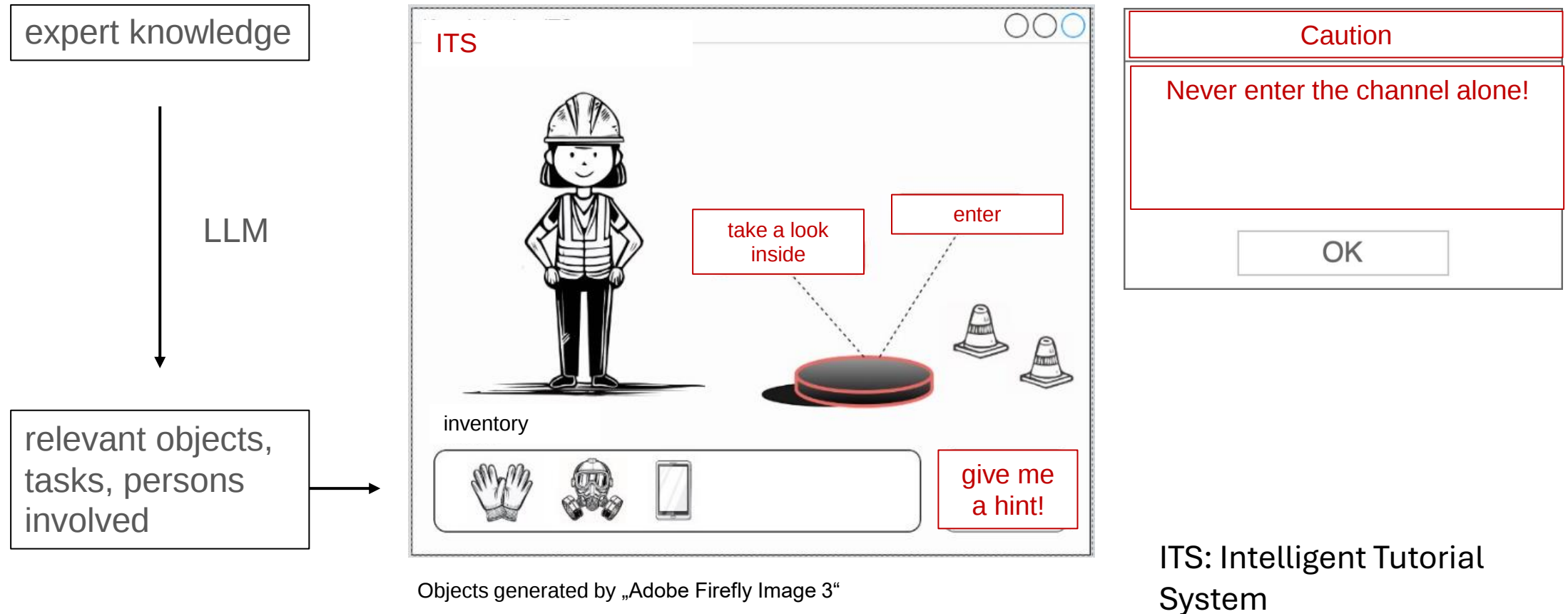
- LLM should be “flexibly integrated into teaching as an intelligent tutor, learning partner, and educational tool” (Wang & Fan 2025)
- Because of hallucination, LLM become an unreliable source for language and literature learning (Ahmad et al. 2023)



Solution

- no LLM to create learning materials, but to speed up the development process
- Intelligent tutorial system (ITS) to assess the actual learning progress

Example – enter into confined spaces



| Questions?

INNOVET



Gefördert als InnoVET PLUS-Projekt aus Mitteln des Bundesministeriums für Bildung und Forschung.

iGracias!

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